

NASA/KWAJEX Gauge & Disdrometer Installation Log

Prepared by
Paul Bashor, NASA/WFFF

T/B Inventory Aeromet Trailer

Ser #s		
2122	2111	missing merc. switches
1993	2186	
2191		
2181		
2009		
2120		
2154		
2183	13 ENCLOSURES	
2148	W/HDWG	
2125		
2203	17 RAINGUAGES	
2207 (1074 whs)	WOODEN PLATFORMS	
2198		
2131	10 APL WOODEN PLATFORMS	
2133		
2232	(Don Penny)	

1010 Chuck Roberts 5-1327

Don Penny – Macy's
Rm 213 Ph 50813

Brian Cunningham
Rm 222 Ph 50822

Tues 13 July

Set up for Don Penny to take to Lae

- 1 Tb ser # 2232
- 1 Data Logger
- 1 wooden stake
- 1 Wood rain gauge platform
- 1 mt adapter (metal) with HD use

2 pc wire for tb setup
1 wood APL Disd. Mount platform
1 APL Disd W99-4
tested disdrometer, and it was responding

TRMM Projest Office 805-355-1029
805-355-2156

Steve – Joe – Quincy
5- 1029 or 5- 2156

Tues 13 July 99

Went to Aeromet weather station and met Mark Fair who is the Aeromet/TRMM Coordinator. He showed me the equipment that was stored in one of the two trailers behind the Aeromet Bldg.

I inventoried what was there, and it is listed on Page 1. Elliott Mosley said we needed to get 1 rainguage for Don Penny who is going back out to one of the outer Islands. (LAE) We took T/B ser# 2232 and the hardware and platforms to bldg. 1073 whish is their incoming freight rec. area. I alos took one AAPL disd. Mtg. Platform. At the trailer, I found no dosdrometers or data logger units for the T/B's

Mark Fair told me that they had canabalized mercury switches out of T/B's ser# 2111 and 2186. After searching through the various freight pallets, I found 9 data loggers and 2 APL disdr. I put one data logger with Don penny's T/B and checked out both APL didr. with my laptop. Both disd. were responding so I put disdr. W99-4 with Don's T/B.

I am now waiting to hear from Elliott.He is going to try to get a key to the freight storage area and a location for me to consolodate the equip. once I open the pallets. He is also trying to get me a van to move it to that location. Elliott's work phone # is 5-4425

I will also contact Don Penny before he leaves to go back to the Island, to make sure he has software and everything he needs to set up T/B and APL disd.

Wed. 14 July, 1999

This morning, Don and Brian helped me consolidate the TRMM equipment in bldg. 1074 and the Aeromet Trailer we brought it over to room 117 in bldg 1009. This room will be our staging area I guess. No phone in there yet. I arranged the equipment and inventoried it. The results of the inventory are below.

23 tipping buckets
ser nos.

2134	2122
2213	1993
2185	2120
2002	2009
2207	2148
2156	2133
2181	2154
2198	2203
2183	2191
2131	2125
2198	
2183	
2131	
2162	

2111 (missing mercury sw.)

2186 (missing Mercury sw.)

NOTE: 2232 was sent to LAE w/ Don Penny

14 Data Logger Enclosures
(one has data logger installed)

15 2' wooden stakes

19 wood T/B stands

9 wood disdr. stands

7 APL disdrometers

Ser. Nos.

W98-11

W98-1

W98-2

W99-2

W99-3

W99-5

W99-1

NOTE: W99-4 was sent to LAE with Don Penny

1 Spare Apl Disdrometer battery box

3 data loggers

9 data logger battery packs

32 u bolts & misc. hardware

14 metal mtg plates

25 plastic nuts

1 gateway laptop ser# 0013553832

ECN # 2031593

1 red tool box

Late in the afternoon, I met Steve Hipskind. I believe he is the NASA TRMM coordinator on Kwaj. We talked about missing parts, and he told me he would start checking into that.

Thurs 15 July, 1999

Tested response and batt. Voltage for all APL disdrometers and spare battery. All batteries have good voltage and all disdrometers are responding.

Checked out gateway laptop that will be going to Woj. It is working properly, all software has been installed and it is communicating properly.

Phone people have installed a phone and the number is 5-3275

I have set aside TB and Disdr. to go to Woj. The T/B is ser # 2134 and disdr. is W99-2. As of this day I have no more power cables for the APL disdr.

5:30 P.m. I went to the designated site opposite Coral Sands Beach. I paced it out and it doesn't look wide enough to lay out a 100 meter triangle without putting TB's under the trees and very near the auxilliary concrete pad of the runway. I am going to lay out a diamond shape array with a TB in the center.

Friday 16 July, 1999

This morning at 7:30 I went back to the storage area (bldg 1074) and went through the pallets again. I found the power cables, 2 battery chargers and a large pair of chanel locks, that I had previously over looked with the exception of some mounting screws and a large hammer, I am ready to start. I expect to do the Kwajalein array today.

Began working on the array, took about 1 hr to lay the parts out. I had a great deal of trouble with the logger software. It appeared as the schemes were loading, but the parameters were not correct. I managed to get the TB's setup, but by the end of the day I still had not programmed them.

Sat 17 July

I talked to Brad Fisher by phone around 7:30 am local. We were able to determine the configuration problem, and correct it.

I started programming the TB's around 9:00 am and finished around 2:00 pm. ALL TB's and disdrometer were programmed and tested,

and are functioning properly. Below is a summary of the Kwajalein tipping bucket array.

KWAJ 1 – initialized at 11:27am 17 July 99

Location N08° 43.20 E167° 43.475 serial #2002

Hazy overcast 10-15 mph breeze – No unusual conditions or problems

KWAJ 2 – initialized at 11:54am 17 July 99

Location N 08° 43.209 E167° 43.475 serial #2213

Hazy overcast 10-15 mph breeze – no unusual conditions or problems

KWAJ 3 – initialized at 12:16pm 17 July 99

Location N08° 43.173 E167° 43.521 serial #2156

Hazy overcast 10-15 mph breeze – No unusual conditions or problems

KWAJ 4 – initialized at 12:34pm 17 July 99

Location N08° 43.246 E167° 43.488 serial #2185

Hazy overcast 10-15 mph breeze – No unusual conditions or problems

KWAJ 5 – initialized at 12:55pm 17 July 99

Locations N08° 43.204 E167° 43.517 serial # 2207

Hazy overcast 10-15 mph breeze – No unusual conditions or problems

W99-1 Disdrometer initialized at 13:21pm 17 July 99

Location N08° 43.217 E167° 43.485

See folded map in back of book

Sat July 17, 99 Cont'd

After finishing the Kwajalein array, I began pulling equipment to go to Roi-Namur on Sunday the equipment is:

TB's Ser# 2125
2191
2203
2154
Disdrometer W99-1

I loaded the equipment up and took it to the terminal, they told me it should make the 5pm. flight to Roi-Namur after dropping equipment off I stopped at the office of Jack Beckett of flight operations to notify him. He was upset because he hadn't been previously informed of the setup plans. He indicated to me that there could be no setup from 500' out from the centerline of the array. He suggested that we might need a waiver to put the guages at the desired location.

As of this entry, I assume Chuck Roberts, Elliott Mosley and Steve Hipkind are trying to work that out.

I am supposed to meet Russ Elge at Roi-Namur and he is supposed to have a pickup and a sledge hammer for me.

Sunday 18 July, 1999

Took the 10:35 flight on dash to Roi-Namur at the terminal, met up with the person Russ Elge (5-6247) sent, and he took me to pick up sledge hammer. He dropped me off with the Aeromet people at the terminal. Mark Fair, Sherry Howard, and the two Bobs. They had a minivan, and they let me go with them.

I received permission from the fire-company to go out to the centerline of the runway and pace it off. I found that from the centerline to the TB's and the hotwire anemometer was approx. 60 meters. From the centerline to the opposite roadside palm trees is approx. 220'. After that we let the fire Co. know that we were clear of the runway, and scouted the Island for Alternative locations. The only location we found that was nearly suitable was near a taxi runway next to the perimeter road. It is circled on the map of Roi-Namur in the back of the book.

Layout of existing Aeromet site on Roi-Namur

After looking the Island over, we took my gear to the Aeromet balloon tracking facility and stored it there. I was unable to contact Russ Elge by phone in order to get this ok to keep the hammer until Wednesday. I took the 1935 Dash flight back to Kwajalein, arriving near 8:00pm.

Monday 18 July, 1999

As per Steve Hipskinds request, I went back to the Kwajalein TB's array and measured distance from road to taxi way.

The results as follows

I am scheduled to take the helo flight to Carlos tomorrow morning at approx. 7:30am. I have prepared a tipping bucket to go up there. The TB is Ser # 2133. My compass and GPS tracker are in the black tool case which I took to Roi-Namur yesterday along with the TB's and 1 disd. I will not be able to get a location, but maybe Ali or whoever goes to download the data will be able to take it with them.

The Gateway computer that Lester brought in for me still does not work. I will have to leave the Toshiba here. Right now, the Toshiba is the only one that communicates with the disdrometers. Often it comes up with a keyboard error and you have to shut it down and shake it once, after that, it works fine. We still have the Gateway lapiop that is supposed to go to Woja, but I don't want to pull that out unless it is absolutely necessary.

I have discovered that the battery and modem for the Gateway laptop that Lester brought are still in Wallops in the Toshiba computer bag. Looks like the Gateway will only be useful in an office environment. I will bring it back when I leave, I am not sure why Gerry McIntire didn't give him.

Tuesday 20 July, 1999

I missed the helo flight today because I had flip flops on instead of shoes. By the time I got back to the helo office, It was gone. Lesson: -> Wear shoes on all USAKA flights and boat rides.

I spent most of the rest of the day helping PaulCucero (SP) set up his video disdr. When I left him around 3:00pm, he was beginning to set up the computers. He also looked at the Kwajalein TB array and suggested possibly moving the TB closest to the concret runway in order to make the array less symetric. If I get a chance, I will try to get a suggested position from him, I know that Jack Beckett from the flight Ops wants it moved a little farther away.

During the early evening, I talked to Steve Hipskind about tomorrow's schedule. We have decided to go to Meck to continue TB installations. I have prepared a TB for Meck it is Ser # 2122. I am also taking APL disdrometer W99-3. I will take the sledge hammer to drive the stake as well.

As of Now, I am scheduled to put TB's on Roi-Namur on Thurs. Jack Beckett won't let us put the TB's in the location provided by Ali and Brad. They have indicated that they want me to put 5 TB's and 1 disdrometer in the golf course driving range.

Wednesday 21 July, 1999

I took 1 TB and 1 Disdrometer to Meck by Catamaran boat. It takes approx. 45 minutes including a short stop over at Ebaye.

I found Dr. Garstang and his group, and they provided me with information about the location of the exiting Areomet TB.

See diagram of Meck site.

Meck TB

Scheme designation = Meck

Ser # 2122 Initialized 9:55am 21 July 1999

Location: N 08° 59' 43.3

E 167° 43' 37.9

Light hazy overcast winds ENE 15-20 mph.

APL disdrometer initialized at 10:09am. 21 July 1999

Both TB and APL disdr. tested good and no problems or unusual conditions noted.

I returned to Kwajalein at approx. 4:30. I went down to the KWAJ TB array site and repositioned TB's KWAJ 2 and KWAJ 4. I repositioned Kwaj 2 because Jack bedkett says it is too close to the taxiway, and I repositioned KWAJ 4 to bring it farther away from the trees.

The new configuration is illustrated on the next page.

KWAJ 2 Reinitialized at 17:27 21 July 1999
Tested ok No problems

KWAJ 4 Reinitialized at 17:46 21 July 1999
Tested ok No problems

Thursday 22 July, 1999

I caught the 8:00am dash flight to Roi-Namur. When I got there, I had a pick up waiting and I picked up the fifth tipping bucket and accy's. I went to the Aeromet facility there bldg 8135 (telemetry) where the other TB's were stored. I called the TRMM Project Office to verify that I was to put gauges on the driving range, and Wendy told me I had the ok., she suggested I contact Karen Robas who is in charge of the driving range to give her advance notice. I met her at the driving range at about 9:30am. I explained to her as best as I could what the TRMM project was about. She had no problem with the installation.

I started about 9:45am and worked until about 3:30pm. The 1st TB (Roi1) would not initialize, so I went to the others. After I finished the rest, I came back to Roi1 and tried again. I had no luck. I believe the data logger is bad and should be replaced 4 of the 5 TB's are working, and the APL disdr. is working.

Details below

Destination Roi 1 Not functioning

Location: 9° N 24.025
167° E 28.081

Weather: Hot; partly cloudy

Destination Roi 2 Initialized at 11:03am

22 July 1999 Tested and working ok

Location: 9° N 24.029
167° E 28.080

Weather: partly cloudy; hot

Destination Roi 3 Initialized at 11:41am

22 July 1999 Tested and working ok

Location: 9° N 24.041

167° E 28.061

Weather: partly cloudy; hot

Destination Roi 4 Initialized at 12:15

22 July 1999 Tested and working ok

Location: 9° N 24.053

167° E 28.028

Weather: Partly cloudy; hot

Destination Roi 5 initialized at 13:00

22 July 1999 Tested and working ok

Location: 9° N 24.054

167° E 28.080

Weather partly cloudy; hot

See map in the back of log book for location of driving range on Roi-Namur

I returned to Kwajalein on the 1615 flight.

Miscellaneous Notes:

1. Wear shoes whenever boarding USAKA helicopters ships or planes.
2. Sledge hammer left in telemetry bldg on Roi-Namur needs to be returned to Russ Else (5-6247)
3. Roi1 data logger needs to be replaced on Roi-Namur, and initialized.
4. Sledge hammer in Rm. 117 of bldg. 1009 needs to be returned to Chuck Roberts when done with it. (5-1327)
5. All tools needed for TB and APL disd. setup are in black tool case in room 117 of bldg. 1009.

6. Toshiba laptop and all accy's should be returned to Paul Bashor – Wallops Island at the end of project.
7. GPS locator should be returned to John Gerlach – Wallops Island at the end of the project.
8. Hilited names and phone nos. at the fornt of the book are important ones.
9. Do Not leave laptop out in the direct sun for extended periods of time. It will get to hot and not want to work right.

